

Driving Change: The Economic Impact of Alternative Funding Mechanisms

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Agenda



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Topic Context

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Q&A



In this webinar, we will explore the possible methods for consistent infrastructure funding using REMI's Tax-PI and TranSight models. We will discuss a possible road usage fee in the form of a toll and the funds it would raise; an increase in the gas tax; and the overall economic impacts of each mechanism on a theoretical Colorado economy.



Brief History





- **1991** Colorado increased gas tax to \$0.22/gallon
- **2020** the Colorado Department of Transportation introduced 25-year statewide plan
- 2021 Congress passed Infrastructure Investment and Jobs Act
 - the Colorado General Assembly passed SB 21-260

Why Is This Important?





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Virginia: Flat Fee	Utah: Mileage-Based	Nation-Wide: Tolls
 Done during registration as a formula Based on fuel efficiency Only fuel-efficient vehicles pay 	 Flat 1.06 cents per mile up to a flat fee Flat fee based on fuel-efficiency Voluntary, so all can participate, fuel- efficient vehicles pay more 	 Single Piece of Infrastructure Express Lanes Road itself

Different Types of Tolls

	Examples	Implementation	Impacts
Single Piece of Road	Lincoln Tunnel (NY/NJ); Golden Gate Bridge (CA); Chesapeake Bay Bridge-Tunnel (VA)	Single direction or bi- directional depending on multiple factors; can be either one of the lower methods	Higher Fee for a smaller length of usage; detours depending on length
Full Length Toll-Gate	New Jersey Turnpike; Ohio Turnpike; Indiana Toll Road	Either a ticket or cash system; a ticket system would require people at toll-gates	Maintaining the gates costs more money and may cause traffic delays
Full Length Open Road	Pennsylvania Turnpike; Massachusetts Turnpike; New York State Thruway	Transponder System, i.e., EZ-Pass; Automatic Plate Number Recognition	Privacy concerns with APNR, but lower costs and better traffic flow

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With the increased use of electric vehicles and reduced gas tax revenues, there is an increased demand for the support of transportation infrastructure.

Alternative funding mechanisms will be necessary to continue building new infrastructure and maintain current roads, rails, and bridges.

We need excess funds to invest in the maintenance of existing transportation system, built new roadways and infrastructure.

How are we modeling this problem?

3 Funding Scenarios

"Do Nothing" Effect

- Effects on transportation cost in the short, medium and long run
- Lack of investments
- Effect on employment and GDP

Gas Tax Effect

- A shift in consumer habits increasing the demand for EVs
- Increased use of public transportation
- Potential decrease in prices of automobiles and car insurance

Road Usage Fee Effect

- Additional funding for the state
- Increased population base that contribute towards state revenue

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Model Simulation: REMI Tax-PI

Tax-PI

REMI Tax-PI is the only commercially available dynamic macroeconomic and fiscal impact analysis tool.

Tax-PI allows users to understand the deep linkages and relationship between a budget and its economic foundation

Model Simulation: REMI TranSight

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-longterm impacts of transportation investments on jobs, population, income, and other economic variables

Model Simulation: Model Info

• "Business as Usual" Fore	cast
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- No changes to industry or new indicators
 - Forecast results are measured in differences to the standard control

Revenue Generation Comparison

Control Forecast

- Using Policy Variables and Budget Components to Model Custom Scenario
 Gas Tax vs. Road Usage Fee
 - Capture widespread economic effects in REMI Tax-PI

Value of Network

- Revenue Increases Fund Infrastructure Maintenance in the Region
 - Captures the long-term value of the transportation network
 - Results derived from REMI TranSight

Model Inputs: Budget File - Revenues

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Model Inputs: Indicators & Policy Variables

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Example: Indicator - Income Tax

Model Inputs: Indicators & Policy Variables

Example: Policy Variable - Income Tax

Select a policy variable to associate with the budget item. When a policy variable change is made to this budget item, the associated model variable will automatically be changed. For best results, choose a policy variable that best represents how this budget category works. For example, a sales tax on consumer goods could be matched with the Consumer Price policy variable.

Most policy variables are associated with a relevant result category which is used to spread grouped details. After selecting the variable, enter the percentage of the baseline value for each detail to be used when calculating spreading weights. In the sales tax example, if clothing is taxed at half the rate of other commodities, enter 50. If food is not taxed, enter 0.

Policy Variable	
Personal Taxes	~

Enter the percentage of the baseline value for each detail to be used when calculating spreading weights.

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Model Inputs: Budget File - Expenditures

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Model Inputs: Indicators & Policy Variables

Example: Indicator - Education Spending

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Model Inputs: Indicators & Policy Variables

Example: Policy Variable - Education Spending

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Model Inputs: Revenue Changes

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Model Inputs: Revenue Changes

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Model Inputs: TranSight Inputs

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Gas Tax vs RUF: GDP

Key Takeaways:

- The GDP takes an initial dip when both taxes go into effect
- After its initial recovery, the Gas Tax GDP starts to decline over time while the RUF GDP sustains itself

Y Axis: Billions of Fixed \$ X Axis: Years

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From REMI Tax-PI

"Do Nothing" Scenario: GDP

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Key Takeaways:

- GDP will not recover from the lack of infrastructure funding on its own
- It's important to note this scenario does not include the reinvestment of collected funds

Y Axis: Billions of Fixed \$ X Axis: Years

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From REMI TranSight

Gas Tax vs RUF: Employment

Employment Comparison No Investment

Key Takeaways:

- Similar to the GDP graph, both the gas tax and RUF take a dive
- However, the RUF shows an increasing trend at a faster rate than the gas tax. While the gas tax starts decreasing after 2036

Y Axis: Thousands of Jobs X Axis: Years

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From REMI Tax-PI

"Do Nothing" Scenario: Employment

Employment Comparison Including No Investment

Key Takeaway:

 While employment does take a considerable hit with the gas tax & RUF, it is considerably less compared to the scenario where there is no investment

Y Axis: Thousands of Jobs X Axis: Years

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From REMI Tax-PI and TranSight

Gas Tax Vs. RUF: - Employment Breakdown (Y2025)

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From REMI Tax-PI

"Do Nothing" Scenario: Commodity Access Index

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From REMI TranSight

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- There is no "right answer" on which revenue stream is more effective, they each impact the regional economy in a uniquely different way
- A miniscule increase in transportation costs leads to long-term economic loss, which is representative of what would happen if there is insufficient funding to pay for transportation infrastructure
- Evaluating simulations like this are useful in performing long-term economic impact analysis

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Thank you for attending!

For more information, please contact info@remi.com