

Changes in Fuel Tax Policy and the Impact on State and Federal Revenue

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Summary

Problem

- Fuel taxes as an important source of funding for road infrastructure in the United States
- Non-adjustment of fuel taxes to inflation led to a widening funding gap over the years because of road maintenance cost increases

Objective

- Analyze an indexing of fuel taxes to inflation
- Project state and federal revenue over 10 years

Preliminary results

- Relatively small increase in gasoline prices from indexing fuel taxes to inflation.
- Small reduction in gasoline consumed due to inelastic gasoline demand.

Introduction

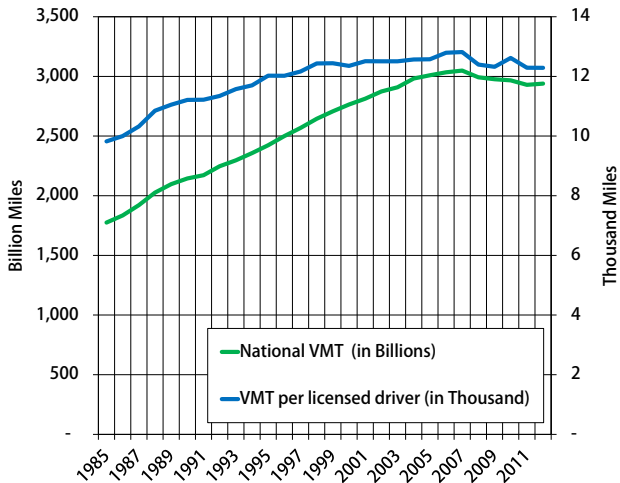
Gasoline and diesel taxes as an important stream of revenue for state and federal government to fund road infrastructure:

- Tax revenue of \$30 billion annually which covers 85% of funding for road construction and maintenance

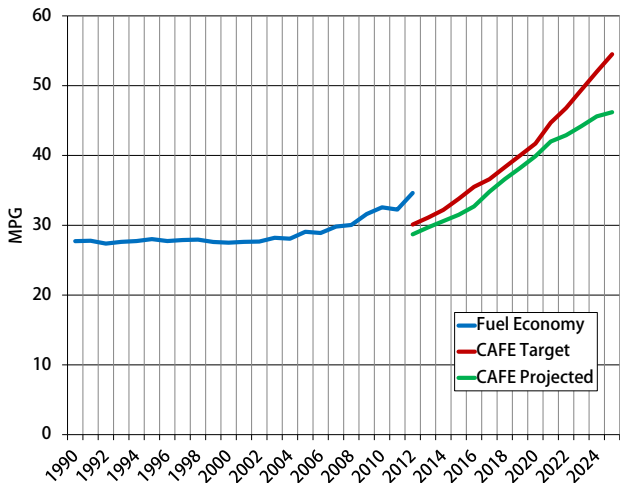
Erosion of tax revenue over time:

- Increase in fuel efficiency of motor vehicles over time in addition to stagnant vehicle miles traveled (VMT)
- Fixed per-gallon fuel tax not adjusted to inflation in most states and at the federal level

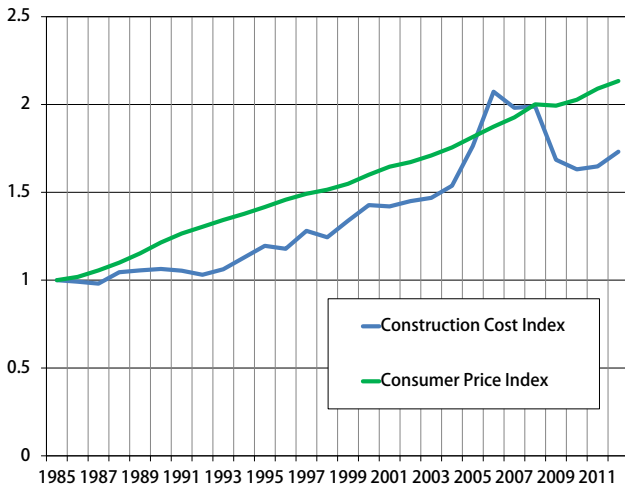
Vehicle Miles Traveled (VMT)



Fuel Economy and Corporate Average Fuel Economy (CAFE)



Cost Evolution



Fuel Taxes at the Federal Level

Highway Trust Fund

- Fund reserved to finance the Interstate System and other highway projects
- Current level of tax for gasoline and diesel: \$0.184 and \$0.244, respectively
- Implementation: October 1st, 1997
- Every 1-cent increase in the gas tax generates \$1.5 billion for the Highway Trust Fund

Problem

- Expected balance of zero in September 2014

Fuel Taxes at the State Level

Example: Iowa

- No adjustment of the gasoline tax between 1988 and 2001 (\$0.20)
- Last adjustment of the diesel tax: 1988

States in general

- After adjusting to account for growth in construction costs, the average state's gas tax rate has effectively fallen by 20% or 6.8 cents per gallon since the last time it was increased.
- Loss of \$10 billion in revenue each year as a result of failing to plan for transportation cost growth.

Soy Transportation Coalition

Proposals

- Sales tax of 8.4% for gasoline and 10.6% for diesel (American Association of State Highway and Transportation Officials)
- Mileage-based fee
- 1 cent reduction in gasoline and diesel taxes and immediate indexing to inflation (STC)

Motivation

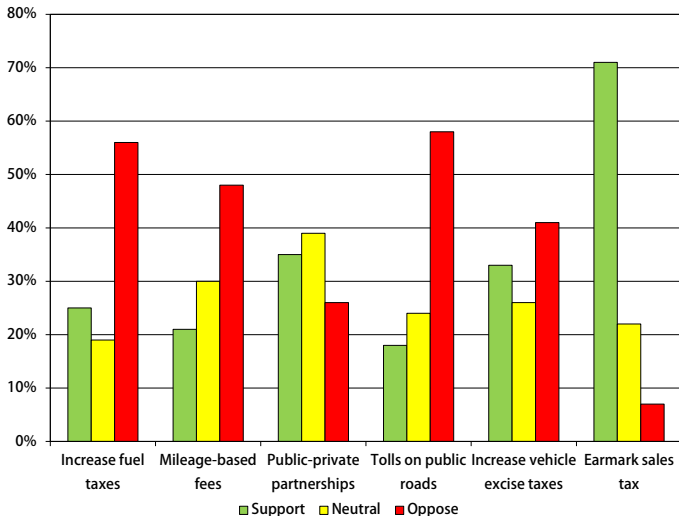
- Short-term concession to taxpayers in exchange for giving long-term sustainability to the transportation program

2012 Indiana Advisory Commission on Intergovernmental Relations (IACIR) Survey

Level of investment in local infrastructure

Infrastructure type	Too much	Adequate	Not enough
Highways	1%	57%	41%
Local roads/streets	1%	43%	56%
Bridges	1%	60%	38%

2012 IACIR Survey



Model and Data

States covered

- Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Nebraska, North Dakota, Ohio, South Dakota, and Tennessee

Data about

- Gasoline and diesel consumption at the state level
- Non-taxed amount of diesel: 10%
- State revenue
- Projection about the future evaluation of the consumer price index
- Gasoline price projections

Indiana Results: Overview

Gasoline price

- Gasoline and diesel: \$0.03 above the baseline level (unadjusted tax rate)

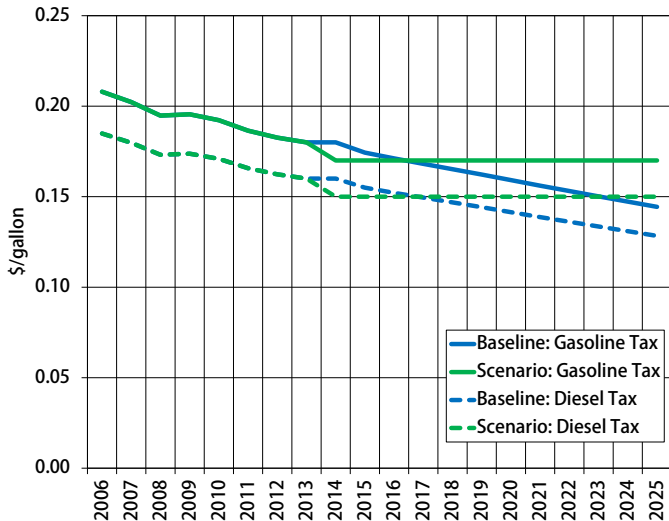
Tax rates

- Tax rates: 3.2 and 2.7 higher for gasoline and diesel, respectively

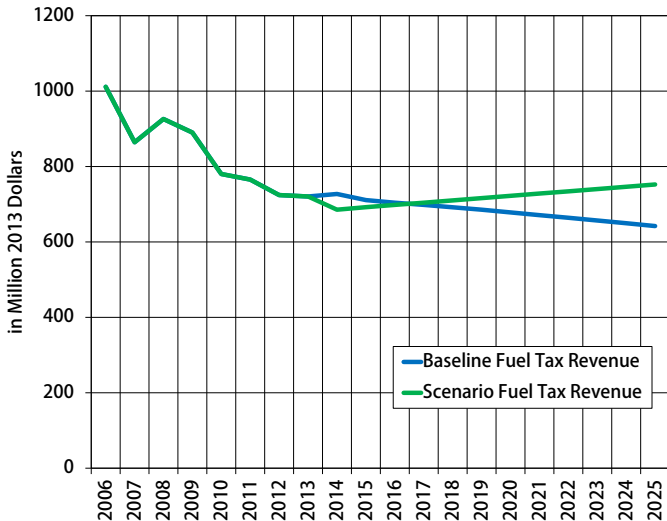
Tax revenue

- Tax revenue (2013 dollars) by 2025: 642 versus 752 million dollars

Indiana Results: Tax Rate



Indiana Results: Tax Revenue



Observations

Small changes big results

- Gasoline and diesel demand is very inelastic
- Small changes in tax rates have large impacts
- Small adjustments in the tax rate leads to significant revenues

CPI versus construction price index

- Construction cost index might be more appropriate
- Large fluctuations and less certain revenue stream

Conclusion

Problematic financing of the infrastructure

- Decrease in real tax revenue at the federal and the state level
- Moderate adjustments in the tax rate could lead to a significant improvement of state and federal revenue
- Small changes in gasoline and diesel prices