

# **Congestion Pricing: Background and Basics**

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# What's Wrong with the Gas Tax?

- Revenues inadequate to fund “needs”
- So why not just raise tax rates?
- Fuel taxes price *fuel* use, not *highway* use
  - Rising energy prices, evolving technology are “divorcing” fuel use from highway use
  - Raising tax rates will accelerate this process
- Doesn't tell us how much, where, or when to invest the revenue it generates

# The Problem is *Congestion*, Not Lack of Capacity

- Without prices for using highways, congestion grows until delay costs balance demand with capacity
- Capacity will *always* be inadequate as long as highway use is free
- When roads become “hypercongested,” their capacity actually *declines*

# Consequences of Rationing by Congestion

- Delays “price off” travelers with highest values of time, most time-sensitive shipments
- Shippers relocate warehouses, reschedule or re-route shipments to avoid unreliable deliveries
- “Just –in-time” inventory management is risky
- Businesses relocate to reduce commuting times
- Housing prices rise around employment centers

# An Alternative: Highway Pricing

- *Tolls* are familiar: flat charges for vehicles using a highway, bridge, or tunnel
- With *congestion pricing*, charges are limited to – or higher during – peak travel hours
- In theory, prices should reflect costs of delays vehicles impose on others

# Familiar Examples

- Public sector often lets congestion ration available supply
  - Electricity: summer “brownouts”
  - Municipal water supply: sprinkler bans, water rationing
- Private sector uses prices to manage demand
  - Airline fares: enormous variability
  - Theater tickets: weekends expensive, matinees cheap

# How Would It Work?

- Increase existing tolls on turnpikes, bridges, tunnels during peak hours
- Many possibilities for highways:
  - Charge for all lanes during rush hour
  - Charge for some lanes, leave others free
  - Charge solo drivers to use carpool lanes
- Area-wide pricing for congested downtowns: flat charge for driving anywhere within a designated area

# Is Pricing “Double Taxation?”

- Fuel taxes average about \$0.02 per mile
  - Federal taxes roughly equal environmental damages from fuel production and use
  - State taxes barely cover highway maintenance
- Delay costs can be over \$1.00 per mile in very congested conditions
- Costs for building highways to handle peak demand are 10-25 times fuel tax payments

# Could the Cure be Worse than the Disease?

- Many – maybe most – drivers and shippers will value time savings and improved reliability more than the prices they pay
- Not necessarily the same drivers on every trip, but that's probably good
- Others won't, and will shift to public transit, different routes, or other times of the day
- Some trips may be combined into “chains”

# Making Sure It Isn't (Worse)

- Use revenues to mitigate adverse impacts
  - Improve public transit service
  - Minimize neighborhood impacts of diversion
  - Promote telecommuting
  - Facilitate e-commerce
- Pricing only some lanes, leaving others free helps ensure that most drivers won't be worse off

# Many Benefits

- Time savings from faster travel
- Improve reliability in arrival times for commuters, freight shippers
- Increase effective capacity of highways without major investment
- Reduce fuel use, tailpipe emissions
- Lessen incentive for firms to relocate
- Take some pressure off housing prices

# A Potential Revolution in Highway Finance

- Revenues could fund a major share of costs for building new highways, expanding capacity of existing routes
- Provides a built-in signal for where – and when – adding capacity makes sense
- Disciplines investment “needs” by redistributing demand throughout the day
- Charges users who benefit directly

## ...and Another Thing

- Should also charge heavy trucks for building thicker pavement
- Congestion pricing makes sense for other transportation modes
  - Public transit
  - Airports and air traffic control
  - Inland waterway locks and dams