

Research Underpinnings of Tolling

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- New study: “Alternative funding, financing and pricing approaches for transport systems” (launch summer 2015)
 - Outline
 - Infrastructure definition
 - Benefits of efficient transportation delivery
 - How U.S. is doing
 - Evaluating sources of funding: gas tax vs. tolls

What is Infrastructure?

- Then: A facility bundled with basic services
 - Snow and ice, policing, incident response
- Now: Expanding service bundle
 - Enhanced 24x7 monitoring (safety, reliability, performance)
 - Real time information via mobile device/desktop (Waze, ...)
- Future: uncertain
 - Autonomous vehicles (trucks/cars)
 - Rapid pace of technological change
 - Consumer preferences: Millennials, VMT, shared use, ...
 - New markets: attracting traffic, repurposing

Wider Benefits of Efficient Delivery of Infrastructure

- Benefits to firms
- Benefits to consumers

Benefits to Firms

- Firms produce more efficiently due to economies of scale
- Enables larger geographical supply chain networks
- Enables larger geographical product distribution networks
- Enables access to larger and more competitive labor markets
- Enables specialization of production

Benefits to Consumers

- Increases spatial competition → encourages firm efficiency
- Consumers have access to more products & services
- Workers have access to larger labor markets
- Enables specialization of labor

How is the U.S. Doing?

- “Infrastructure Gap”
 - ASCE Report Card
 - World Economic Forum infrastructure country rankings
 - ...
- “Bottlenecks”

But...

- Use not priced
- Delivery dominated by states
- Project selection highly political → “white elephants”
- Maintenance often deferred → higher “whole of life” costs

Asset value largely unknown

- Indiana Toll Road sale at \$5.7 billion (vs. \$4 billion expected) [March 2015]
- Eurostar (Paris-London/Brussels-London service) sale £750 million (vs. £300 million expected) [March 2015]
- Funding gap or lack of bankable projects?

Key Questions

- Where should scarce resources be invested to expand or renew systems?
- Should we maintain everything?
- Should operators be encouraged to seek out new demand?

How to Evaluate Sources of Funding

- Does it generate adequate, sustainable and reliable funds?
- Does it provide signals about how users value services derived from infrastructure?
- Cost of collection
- Susceptibility to diversion, getting the rates right

Gas Tax: Adequate, reliable and sustainable?

- Political resistance
- Eroding tax base
 - Purchasing power
 - VMT (?)
 - Fuel efficiency
 - Carve outs (hybrids, electrics)

Gas Tax: Signals About Demand?

- Historically ... loose proxy for usage charge
- Today ... failing
 - Unrelated to time/location of usage
 - Little information about how users value services
 - Mostly invisible (except when raises considered)

Tolls: Adequate, reliable and sustainable?

- Revenue dependent on
 - Demand
 - Ability to raise tolls
 - Enforceability

Tolls: Signals About Demand?

- Tied to time and location of use
 - Uncongested facilities: traditional tolling a good proxy
- Congested facilities: variable tolls a good proxy
- Demand tied to how users value services
- Visible

Other Issues

- Cost of Collection
 - Tolls: electronic vs. license plate reading vs. toll booths; interoperability
 - Gas taxes: collected at fuel distribution
- Diversion
 - to other transport modes (e.g., transit)
 - to non-transport purposes
- Getting the rates right
 - Gas tax: eroding base
 - Tolls: resistance to increases; revenue maximizing vs. usage maximizing

Concluding Remarks

- Highway Trust Fund crisis an opportunity to reconsider reliance on gas tax
 - Secretary Foxx to Council on Foreign Relations: “... the reality is that we are going to have to have a different system.”
- Tolls may encourage more efficient delivery of infrastructure services
- Challenges: public acceptance, diversion of revenues, getting the tolls right

Center for Transportation Public-Private Partnership Policy George Mason University

*Expanding the evidence base, enhancing agency capacity,
educating the workforce and community about P3s*

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