

# **Equity & Efficiency in Transportation Finance**

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# Quiet Crisis in Transportation Finance

- The nature of transportation finance is changing fundamentally and on a large scale
- The change is happening gradually, without much public notice or broad discussion
- Burdens are shifting to state & local governments
- The direction of change is toward less efficiency & less equity

# Efficiency & Equity

- To an economist vs. in political arena
- Political arguments more about equity.....
- Policy debates don't match economists' perceptions of equity & efficiency
  - e.g. Return to source
  - e.g. Departures from current situation rather than equitability of current situation

# History of Highway Finance

- Local streets and county roads: transportation finance: 90%++ of system
- State highways were bankrupting states in 1915-25 period during fast growth of autos and roads and this led to innovation of “user fees”
- Tolls are the most desirable user fee, in principle
- Motor fuel taxes and various “car taxes” were adopted as “second best” but workable

# History of Highway Finance

- Motor fuel taxes enormously popular
- Supported by wide variety of constituencies
- Adopted in every state by 1940
- Federal motor fuel tax in thirties
- Fundamental finance mechanism for Interstate System in fifties

# User Fee Finance

- User fees came to be associated with “trust funds” and non-diversion constitutional provisions in many states
- Elastic definition of user fees allowed expansion to transit and to environmental mitigation in many states
- User pays considered equitable, efficiency enhanced to lesser extent

# Motor Fuel Taxes

- Usually expressed as “Cents per Gallon”
- Must be raised by act of legislature
- Revenue does not rise automatically with inflation as does income tax or sales tax
- Improving fuel economy lowers revenue per mile of driving
- Revenue declining precipitously in relation to VMT

# Dimensions of the Quiet Crisis



- State legislatures reluctant to raise user fees
- Increasingly reluctant to directly raise fees or taxes at all...in the name of equity
- Putting measures on ballot for voters to enact instead of taking action in legislatures
- Shift to borrowing rather than pay as you go



# Fuel Tax Changes, 1957-2006

*Average of Fifty States*

*Cents per gallon*

State Fuel Tax in 1957:	5.7
If adjusted for Inflation in 2006:	39.6
Actual Current Fuel Tax:	20.3
Difference	19.3

# Federal Fuel Tax Changes 1957-2006

*Average of Fifty States*

*Cents per gallon*

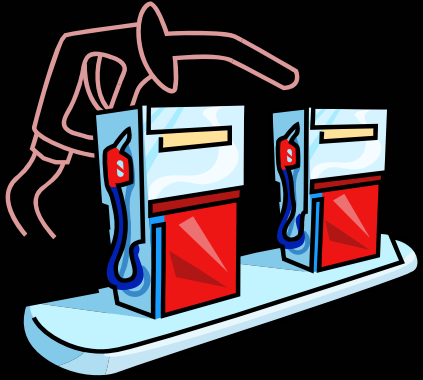
Federal Fuel Tax in 1957: 3.0

Equivalent Tax in 2006: 20.8

Federal Fuel Tax in 2006: 18.4

Difference: 2.4

# Changes in Vehicle Fuel Economy



	1970	1980	1990	2000
Fleet MPG	13.5	15.9	20.2	22.0
10-yr. MPG Change		2.4	4.3	1.8
% change		17.8	27.0	8.9
MPG Change since '70		2.4	6.7	8.5
% change since '70		17.8	49.6	63.0

# Highway & Transit Revenue (billions of \$ for 2004)

	Federal	State	Local	<b>TOTAL</b>
User Fees	34.1	52.1	14.0	<b>100.1</b>
Special Taxes	0.3	6.9	17.7	<b>24.9</b>
General Taxes	3.4	11.3	28.4	<b>43.1</b>
<b>TOTAL</b>	<b>37.9</b>	<b>70.3</b>	<b>60.0</b>	<b>168.2</b>

# Annual Rates of Growth - Last Decade

## FOR HIGHWAYS

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Fuel Taxes 2.4%

Sales Taxes

– State 7.5%

– Local 7.6%

General Taxes

– State 7.5%

– Local 7.7%

## FOR TRANSIT

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Fuel Taxes 3.5%

Fares 3.5%

Sales Taxes 8.5%

General Taxes 7.5%

# Financial Crisis Because



Population is growing

Traffic is growing  
faster than population

User fee revenue is falling

Roads are deteriorating

Congestion is worsening

Feds are devolving responsibility to  
state and local government

# Policy Options for Coping with the Crises

- Important to consider BOTH short term and long term strategies and transition from former to latter
- Short Term
  - Fuel Tax Viable for decades but weakening
- Longer Term
  - Petroleum fuels probably will not dominate
  - Global climate change

# Short-Term Options

- Raise or index motor fuel taxes
- Issue public debt
- “Dedicated” sales taxes
- Increase toll financing
- Public-private partnerships
- Lease of public assets



# Raise or Index Fuel Tax

## Pros

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- Can address revenue need for decades
- Is a user fee approach
- Somewhat equitable
- Encourages increased fuel economy
- Administratively simple

## Cons

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- Politically unpopular
- Burdens the poor who must drive
- Can exacerbate price fluctuations
- What base for indexing?
- Revenues drop when fuel economy improves
- Small base means rate must be high



# Issue Public Debt

- Like a home mortgage
- Particularly attractive in states with much “through traffic”
- Must repay capital plus interest . . . roughly doubles the cost in dollars
- Can be efficient and equitable if debt repaid by user fees; specific cases vary

# Issue Public Debt

## Pros

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- Can build projects sooner at lower cost
- Spreads cost over life of project
- Attractive to investors; tax exempt



## Cons

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- The cost of interest is substantial
- State has limited bonding capacity & needs for investments that do not generate user fees
- Income from projects may fall short of costs

# Dedicated Sales Taxes

- Most popular and fastest growing
  - 40-60 measures per year nationally for last six years
- Majority or supermajority (in CA) vote of public required
- Sunset date; reauthorization required
- Lists of projects or categories of spending
- Implemented by the jurisdiction enacting the measure

# Dedicated Sales Taxes

## Pros

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- Large tax base means rate can be lower
- Referenda have been popular: direct democracy; project lists and time limited
- Familiar to populace
- Not difficult to administer
- Few transition costs

## Cons

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- Must be periodically reauthorized
- More regressive than fuel taxes
- Inflexible because of specificity
- Christmas tree Measures
- Local responsibility for problems created by “through” traffic

# Increase Toll Financing

- The most direct user fee
- Fuel taxes were “second best” approximation
- Administrative complexity is reduced; can today be charged electronically
- Tolls can be varied to control congestion as well as to produce revenue

# Congestion Pricing

An idea whose time  
may have finally  
come, after being  
discussed for  
85 years



# Progress in Past Decade

- Facility pricing in the USA vs. area pricing in Europe
- HOT lanes . . . SR 91, I-15 and growing
- Proving efficiency and effectiveness of electronic toll collection . . . also building public acceptance of tolls
- Prospects growing in many metro areas



# Increase Toll Financing

## Pros

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- Lucrative
- Charges users directly
- Can be used to control congestion
- Becoming easier to administer

## Cons

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- Paying “twice” for roads via fuel taxes & tolls
- Politically unpopular to some important constituencies

# Public-Private Partnerships

- Invite private investors to finance new roads and to pay off their capital investments through tolls
- Done in many other countries through concessions
- SR 91; SR 125 and I-15 projects in CA

# Public-Private Partnerships

## Pros

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- Access to private capital markets & investors are willing to look
- Lowers need for public tax or fee increases
- Removes political argument from toll increases

## Cons

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- Only available for profitable projects and systems need many projects (e.g. public transit) that cannot cover their costs
- Costs of investors fees and profits as well as actual costs

# Lease of Public Assets

- Allow private investors to lease and maintain and operate existing assets
- Examples are Chicago Skyway, Indiana Toll Road
- Possibly New Jersey and Pennsylvania Turnpikes
- Operators keep tolls and pay in cash up front, using borrowed capital from banks & pension funds

# Lease of Public Assets

## Pros

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- Short term infusion of cash to address crisis
- Facilities will be maintained to state standards
- Removes political argument from toll increases

## Cons

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- Difficult to set a value on a public asset and investors may profit at expense of state
- Must pay fees and profit as well as costs
- Opportunities limited to very few facilities

# Longer-Term Options

- Direct electronic charges based on use, energy efficiency of vehicle, cost of facility
- Electronic and GPSS technology already in use in Germany, Austria, Switzerland and elsewhere for truck charges



# Trials in the USA

- Atlanta
- Twin Cities
- State of Oregon
- Seattle

# Political/Public Acceptance: The Privacy Issue

- Fear
  - With all this on-board technology, is Big Brother watching?
- Fueled by press misrepresentations:
  - LA Times quote: “tracking devices send a signal to a GPS satellite following the car”



# Means of Charging for use Does Impact Choices

- Congestion pricing has reduced congestion in dozens of cities; not a single counter example
- European truck use fees have lessened road damage
- Charging on basis of energy use and place of use is feasible but seen as radical today but may be needed to address global climate change

# The Greatest Challenge

- Aligning political concepts of equity & efficiency with more scholarly definitions
  - Requires trials and demands successes; reverses may take decades to overcome
  - Requires political courage
  - Requires education and persuasion skills

# *Which way do we go?*



# THANK YOU!

ITS TIME FOR YOUR  
QUESTIONS AND COMMENTS

