Highway Cost Allocation Study

The Oregon Highway Cost Allocation Study

Carl Batten and Sarah Dammen, **ECONorthwest**

Highway Cost Allocation in Oregon

- First study in 1937; 17 studies so far
- Since 1999, State Constitution has required a study every two years, and adjustment of revenue sources if found necessary
- Are the shares of revenues paid by light and heavy vehicles fair and proportionate to their shares of costs?

Highway Cost Allocation in Oregon

- Study Review Team reviews methods, data, and results, and discusses issues
  - Eleven members, chaired by State Economist
    - Doug Anderson, Metro
    - Doug Benzon, Idaho Department of Transportation
    - Jerri Bohard, Oregon Department of Transportation
    - John Gallup, Portland State University
    - Mazen Malik, Oregon Legislative Revenue Office
    - Mike McArthur, Association of Oregon Counties
    - Timothy Morgan, AAA Oregon
    - Don Negri, Willamette University
    - Jon Oshel, Association of Oregon Counties
    - Tom Potiowsky, Chair, State Economist
    - Bob Russell, Oregon Trucking Associations

What is Highway Cost Allocation?

Do various classes of highway users pay user fees in proportion to the costs they impose on the highway system?

- Define user classes
- Allocate costs to user classes
- Attribute revenues to user classes
- Calculate equity ratios
  - Share of revenue / Share of cost

Two approaches for 2011

- Traditional approach
  - Budgeted expenditures are assumed to represent costs and are allocated out to vehicle classes
- Efficient-fee approach
  - Costs imposed by each vehicle class are estimated directly—not tied to expenditures in any particular biennium
- Revenue attribution is the same

Oregon's Traditional Approach

- Costs to allocate are expenditures over upcoming biennium
- Expenditures of federal funds are included (because they are interchangeable)
- Expenditures by local governments of state funds are included
- Expenditures by local governments of federal and some own-source funds also are included (interchangeability and accountability)
- Chapter 2 of Traditional Report describes structure

Efficient-Fee Approach

- Wear and tear charges based on vehicle weight and configuration and on the characteristics of roads and bridges
- Congestion charges based on amount of cost imposed on other users
  - Vary by road segment and time of day
- Emissions charges based on amount of emissions
  - Vary with weight, speed, fuel, and location

Results of 2011 Studies

- Traditional approach
  - Light vehicle equity ratio: 0.9954
  - Heavy vehicle equity ratio: 1.0089
- Efficient-fee approach
  - Light vehicle equity ratio: 0.9873
  - Heavy vehicle equity ratio: 1.0253

Heavy Vehicles

- Vehicles between 10,001 and 26,000 pounds are overpaying
- Most vehicles between 26,001 and 78,000 pounds are underpaying
- Vehicles between 78,001 and 80,000 pounds are overpaying (1.26 equity ratio). This class accounts for 44% of heavy vehicle miles traveled.
- Most vehicles over 80,000 pounds are underpaying
- Road Use Assessment Fee Vehicles are underpaying (0.48 equity ratio)
- Full details are provided in Chapter 6 of Traditional Report

Recommendations

- No changes to rates are necessary for light-heavy fairness and proportionality
- Chapter 7 of Traditional Report describes revenue-neutral changes to rate structures that would improve equity within heavy vehicles.
  - Flatter Table "A" rate structure (28,000 lbs go from 4.98 to 10.26 cents per mile; 80,000 lbs go from 16.38 to 11.91 cents per mile)
  - Higher Table "B" rates (for example, 105,500 lbs, 7 axles go from 18.11 to 29.39 cents per mile)
  - Higher Road Use Assessment Fees (7.1 to 14.8 cents per ESAL-mile)

2011 Efficient-Fee Study

- Each vehicle would pay a fee for each mile it travels
- Fee consists of five components
  - Congestion charge based on cost of delay imposed on others
  - Wear and tear charge for roads
  - Wear and tear charge for bridges
  - Emissions charge
  - Charge for administrative and other costs
- We estimate the share of efficient-fee charges that would be paid by each vehicle class and call that their share of costs
- We then compare those shares of costs to shares of revenue under current-law instruments and rates

Efficient Congestion Charge

- Determined by cost of delay imposed on others
- Varies with volume and capacity; we assume dynamic pricing
- Since the fee won't actually be charged, we use current volumes to determine shares of cost
- We scale congestion-fee revenues to add up to revenue that would be generated if efficient fees were charged
- Congestion charge would generate $209.5 million of annual revenue (13.4% of total)
- Light vehicles would pay 96% of the congestion charges

Efficient Wear and Tear Charge

- Determined by cost of preservation and maintenance imposed on system
- Varies with weight and configuration of vehicle and with strength and condition of road or bridge
- Wear and tear charges would generate $453.0 million for roads and $163.3 million for bridges, or $616.3 million of annual revenue (39.5% of total)
- Light vehicles would pay 34.2% of road charges and 44.8% of bridge charges, or 37.0% of all wear and tear charges

Efficient Emissions Charge

- Determined by cost that emissions impose on everyone
- Best charged per unit of fuel, rather than per mile
- Emissions charges would generate $493.6 million of annual revenue (31.7% of total)
- Light vehicles would pay 66.6% of emissions charges
- Emissions charges paid by highway users could be used to offset administrative and other costs; we assume that they will be. Remaining administrative and other costs require additional annual revenue of $239.3 million (15.4% of total)
- Light vehicles would pay 93% of a VMT charge to recover remaining administrative and other costs

Getting to an Efficient System

- Charge vehicles for the costs they impose at the times and places they travel
  - Highway users will adjust their behavior to best meet their own needs given the costs they impose on everyone
  - When each vehicle is paying for the costs it imposes, there will be no more need for highway cost allocation studies
- Optimal investment in capacity, preservation, and maintenance
  - Highway agencies will adjust their behavior to best meet the needs of highway users
  - Where cost-effective, capacity may be provided by investing in alternative modes
- First step is better data. Need many more functioning traffic counters in Oregon.

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The Oregon Highway Cost Allocation Study

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Highway Cost Allocation in Oregon

- Department of Administrative Services, Office of Economic Analysis contracts for and oversees study
- ECONorthwest, with Roger Mingo, Jack Faucett Associates, Mark Ford, and HDR conducted the 2011 study
- Brian Hedman of the Cadmus Group served as Project Manager
- ODOT staff provided data and technical assistance

Oregon's Traditional Approach

- Expenditures on bond-financed projects are reduced to amount of bond payments that will be made within the biennium (about 16% of expenditures)
- Allocated costs for bond-financed projects are carried forward to future studies until bond is paid off (nine more biennial studies)
- Additional detail in Chapter 3

Alternative-Fee-Paying Vehicles

- Subsidy amount calculated as difference between what they do pay and what they would pay if they paid regular fees
- Subsidy amount is allocated to weight classes as a “cost” in proportion to vehicle miles traveled by full-fee-paying vehicles
- Flat-fee vehicles no longer considered to be subsidized
- Additional detail in Chapter 3

Flat-fee Rates

Rate per 100 pounds per year	Logs (50% empty)	Sand & Gravel	Wood Chips
Current flat-fee rate	$7.59	$7.53	$30.65
Rate to match current WMT	$7.36	$9.23	$23.05
Rate to match recommended WMT	$6.99	$13.01	$32.71