CBO TESTIMONY

Statement of
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Congestion Pricing for Highways

before the
Joint Economic Committee
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Thank you for giving the Congressional Budget Office an opportunity to present testimony about congestion pricing and highway financing.

As commuters in most large urban areas can affirm, highway congestion has become a serious problem that carries high costs in terms of time. The Texas Transportation Institute has estimated that rush-hour travelers in major metropolitan areas spent 3.6 billion hours in traffic jams in 2000—at a cost of about $67.5 billion.[1] It is unlikely that the United States could ever "build its way out of congestion," even with massive increases in spending on highways. The reason is that greater road capacity—which initially permits greater speeds—tends to attract motorists who previously used other roads, traveled at off-peak times, took public transit, or moved farther out in the suburbs. Soon the road, despite its larger size, becomes as congested as it was before.[2]

The Economics of Congestion Pricing

One policy response to the problem of congestion is to use the mechanism that works so well throughout the market economy: pricing. Congestion is considered an external cost (or "externality") by economists. A motorist on a busy highway not only incurs a cost of delay but also imposes that cost on other motorists. Because individual motorists make the decision to drive on a certain road at a certain time solely on the basis of the costs they incur (not the costs they impose on others), each motorist tends to overuse the road. In theory, to achieve economic efficiency, motorists would be charged the cost of the congestion they caused.

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1. Tim Lomax and David Schrank, *2002 Urban Mobility Study* (College Station, Tex.: Texas Transportation Institute, Texas A&M University, 2002), available at http://mobility.tamu.edu/ums/.

2. For a detailed exposition of that problem, see Anthony Downs, *Stuck in Traffic: Coping with Peak-Hour Traffic Congestion* (Washington, D.C.: Brookings Institution, 1992). That book follows up and elaborates on a classic 1962 article in which Downs propounded the "law of peak-hour expressway congestion."

It is impractical to estimate and assign to each motorist the cost of his or her congestion. That difficulty has led policy analysts to approach the congestion problem from a different angle. In that approach, congestion is considered to arise from the mispricing of a good—namely, highway capacity at a specific place and time. The quantity supplied (measured in lane-miles) is less than the quantity demanded at what is essentially a price of zero.[3]

If a good or service is provided free of charge, people tend to demand more of it—and use it more wastefully—than they would if they had to pay a price that reflected its cost. Hence, congestion pricing is premised on a basic economic concept: charge a price in order to allocate a scarce resource to its most valuable use, as evidenced by users' willingness to pay for the resource.[4]

Introducing congestion pricing on a crowded highway—that is, charging tolls that are higher during peak times of the day and lower during off-peak ones—has two economic effects. First, it dampens demand for the highway during the most congested periods by inducing some motorists to alter their travel plans. Some drivers will be able to modify their schedules so they use the road at less busy times. Others will find alternative routes or switch to public transit. Second, continued demand in the face of

3. Of course, motorists pay fuel and other user taxes that help finance highway construction, but those taxes are not related to the specific time and location of road use. Therefore, they do not serve the pricing function of allocating a scarce resource, such as a congested highway.

4. For an expanded discussion of that topic, see Congressional Budget Office, *Paying for Highways, Airways, and Waterways: How Can Users Be Charged?* (May 1992), pp. 3-5 and 23-26.

appropriate congestion pricing serves as a signal for additional investment in road capacity.[5]

Congestion Pricing in Practice

Congestion pricing has been implemented on several highways in the United States as well as in other countries. The evidence suggests that it has been successful in achieving the objective of enabling vehicles to travel at or near the speed limit on the tolled roads.[6]

Most congestion pricing in the United States has involved new lanes or lanes newly opened to general traffic. In California, private investors built the 91 Express Lanes in the median of the already-congested State Route 91, giving motorists a choice between toll-free lanes or new lanes on which tolls are charged according to the time of day.[7] On Interstate 15 in San Diego, single-occupant vehicles are allowed to "buy in" to high-occupancy-vehicle (HOV) lanes by paying a toll. Such "high-occupancy/toll" (HOT) lanes are also being tried on the Katy Freeway in Houston, Texas.

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5. The decision about whether the revenues from congestion pricing should be used to build new roads is a political one. Alternatively, the revenues could be used to make public transit systems more attractive to commuters or could be rebated to users in a way that helped compensate them while not lessening the incentive to reduce congestion at peak travel times.

6. Patrick DeCorla-Souza and Fred Skaer, "Mainstreaming Pricing Alternatives in the NEPA Project Development Process" (paper prepared for the 82nd Annual Meeting of the Transportation Research Board, Washington, D.C., January 2003), p. 9.

7. For a description of the 91 Express Lanes and other private and public/private partnerships to build roads, see Congressional Budget Office, *Innovative Financing of Highways* (January 1998).

Technological advances have played a crucial role in making congestion pricing feasible. On all of the congestion-priced highways in the United States, tolls are collected electronically. To use the tolled lanes, motorists must acquire a transponder for their vehicles and prepay a certain amount; the tolls are then debited electronically. Electronic toll collection has made it possible to collect congestion charges without compounding the problem by creating congestion at tollbooths. As electronic tolling was being developed, some policymakers initially feared that motorists would not accept it, viewing the system as monitoring by "Big Brother." That concern has waned as large numbers of motorists have signed up for automatic toll collection.[8]

Technological advances have also enabled officials to make "real time" adjustments to congestion prices. Sensors in a road can tell whether it is getting so crowded that motorists cannot safely drive at the target speed.[9] If a road is becoming too congested, a signal can be sent to an electronic message board informing motorists that the price is going to rise. On I-15 in San Diego, where that system is used, motorists are warned of the price they will face well ahead of the on-ramp to the tolled lanes.

People may complain when they have to pay for something that they previously received free of charge. Where congestion pricing has been implemented successfully in the United States, it has been applied to new highways or new lanes of existing

8. For example, the E-ZPass system in the northeastern United States has more than 10 million subscribers. See DeCorla-Souza and Skaer, "Mainstreaming Pricing Alternatives," p. 12.

9. Policymakers could set the target speed at the current speed limit, or they might accept a target of, say, 10 miles per hour less than the current limit, recognizing that the latter provides worse service for each motorist but allows more motorists to use the tolled roadway.

highways.[10] That strategy has given motorists a choice between sitting in traffic on previously existing roads or paying to use new, free-flowing lanes.

Some opponents of congestion pricing fear that tolled roads will be used only by people with high income. But preliminary evidence suggests that the new toll lanes in California are used by people of all income groups.[11] The ability to get somewhere fast and reliably is valued in a variety of circumstances. Not everyone will need or want to incur a toll on a daily basis, but on occasions when getting somewhere quickly is necessary, the option of paying to save time is valuable to people at all income levels.[12]

When the Congress moves to reauthorize the federal highway program (currently authorized through September 30, 2003, under the Transportation Equity Act for the 21st Century), it may want to consider ways to encourage congestion pricing. Two possible methods are eliminating the restrictions that generally prevent states from imposing tolls on Interstate highways and providing incentives for states to try congestion pricing. For example, the federal government could require that states consider imposing congestion pricing on all new highway lanes built in urban areas.

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10. London has recently begun to impose a daily charge of £5 (about $8) for all vehicles entering the center of the city. Initial reports suggest that Londoners are accepting the policy and that it has substantially reduced traffic congestion in the city core. For a review of the first two months' experience, see Todd Litman, *London Congestion Pricing: Implications for Other Cities* (Victoria, B.C., Canada: Victoria Transport Policy Institute, April 28, 2003), available at www.vtpi.org/london.pdf.

11. DeCorla-Souza and Skaer, "Mainstreaming Pricing Alternatives," p. 9.

12. In addition to enabling faster travel, roads that are priced to yield uncongested conditions provide value by ensuring reliability of travel time. That reliability saves time because motorists do not have to factor unpredictable delays (such as those caused by accidents rather than volume of traffic) into their schedules.