



Finding the Funds to Pay for Our Transportation Crisis

A Look at Options for Solving Washington, DC's Traffic Woes

Ian W.H. Parry

Like other big cities across the country, Washington, DC, has horrific traffic problems. Traditional solutions to relieving crowded highways and gridlocked streets are hard to implement—the cost of building new roads has skyrocketed, federal funding has fallen, and political battles have become increasingly heated.

Traffic congestion is a major problem in the metropolitan Washington, DC, area. According to some measures, the Washington area is the second most congested in the nation, behind only Los Angeles. Severe congestion at peak periods has now spread to vast stretches of the Washington-area highway system where, 10 years ago, traffic moved relatively freely.

The main cause of increasing congestion is that road building has not kept pace with the growth in traffic. Between 1982 and 1997, vehicle miles traveled on Washington, DC, freeways almost doubled, while freeway mile capacity increased by only 40%. These trends are set to continue. Expanding the road network is difficult because of opposition from environmental and community groups. But there also are financial constraints: road construction is expensive in densely populated urban areas where property values are high. Moreover, effective funds for highway spending have shrunk—the real gasoline tax per mile driven in the United States has fallen by approximately 50% since 1960, due to improved vehicle fuel efficiency and the failure of nominal tax rates to keep pace with inflation.

Recently, there has been much debate about expanded funding for transportation programs. For example, a

Maryland state commission says the state will need to spend \$27 billion more than planned during the next 20 years to keep pace with likely traffic growth. Several factors are relevant when evaluating transportation expansion projects. Political feasibility is important: public opposition to adding a lane to an existing road might be less than to constructing a brand-new road through neighborhoods. Distributional issues might be a concern: for example, does a new subway station primarily help poorer or wealthier neighborhoods? The benefits of the project are obviously important, such as improved accessibility and the alleviation of traffic congestion; they should be weighed against the costs of financing the project, which will depend on how the revenues are raised.

Several local policy options for generating additional transportation revenues exist. One possibility is to increase transportation charges, such as the gasoline tax or mass transit fares; another is to implement charges for driving on busy roads during peak periods (sometimes called a congestion tax). Other revenue options include increasing local income taxes, sales taxes, or property taxes. Some of these are more politically feasible than others; for example, it seems to be particularly difficult to start charging

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people to drive on roads they previously used for free. But the cost of different policies is an important consideration.

Revenue Source Costs

For households and businesses, the cost of transportation spending is the money they end up paying in higher taxes to the government or road contractor (before the money is recycled to produce transportation benefits). But for society as a whole, the cost also includes the effect the policy has on the efficiency of resource use. For example, social costs will be higher to the extent that the policy reduces employment and investment and lower to the extent that the policy reduces pollution and traffic congestion (independent of the improved transportation infrastructure). For a given amount of additional spending, the money cost of different financing options would be the same, so the discussion here focuses only on the implications of revenue-raising policies for the efficiency of resource use.

Gasoline Taxes

Higher gasoline taxes raise the costs to motorists of driving, and therefore they indirectly discourage traffic congestion and perhaps also the risk of injuries and fatalities from traffic accidents. They also would reduce the use of fuel, thereby reducing pollutants caused by gasoline combustion. Economists such as Alan Krupnick (Resources for the Future) and Kenneth Small (University of California, Irvine) have estimated that people would be willing to pay no more than 60 cents per gallon to avoid the damages to human health and visibility caused by motor vehicle pollution. Gasoline combustion also produces greenhouse gas emissions, and studies have suggested that the damages from future global climate change might amount to anything between 0 and 30 cents per gallon.

But the congestion and pollution benefits should not be overstated because the amount people drive is not especially sensitive to higher gasoline taxes. London is still gridlocked even though gasoline taxes in Britain are seven times as high as in the United States. Moreover, even though reducing gasoline consumption and driving has benefits, it also has economic costs because people are induced to purchase more expensive, fuel-efficient vehicles or make fewer trips. Indeed, a significant portion of the pollution damage is already reflected in the price of gasoline due to federal and state gasoline taxes, which amount to about 40 cents per gallon in the Washington, DC, area. Higher transportation taxes also raise the cost of commuting to work and the cost to firms of doing business, both of which can indi-

rectly reduce employment levels. Reducing employment involves economic costs because it compounds distortions created by taxes on labor earnings. In short, it is not clear that the pollution and congestion benefits of higher gasoline taxes would greatly exceed the costs.

Transit Fares

In principle, transit fares should be set to cover the marginal cost of operating trains or buses more frequently in order to carry additional passengers. A modest fare subsidy might be justified because pricing at marginal cost might not yield enough revenues to cover total operating costs. However, the existing fare subsidy in the Washington area is substantial and probably cannot be justified purely on these grounds. Fare revenues cover only about 50% of the operating costs (and this figure does not include subsidies for infrastructure expansion). If the subsidy is excessive, there might be sizable economic benefits from raising fares for public transportation. But on the other hand, higher transit fares would, indirectly, cause more pollution and traffic congestion because they would induce some people to drive rather than use mass transit. Overall, I estimate that higher transit fares would, most likely, produce a net economic cost for the Washington, DC, region.

Congestion Taxes

On first inspection, congestion taxes might appear to be a very attractive means of raising additional revenues because they discourage traffic congestion. Implementation of this policy could involve charging people to use the major highways into downtown Washington on weekdays during the morning and afternoon peaks. There have been some limited experiments with congestion pricing in California and Texas; such charges can be deducted electronically from a "smart card" installed on a vehicle's windshield.

Congestion pricing is a more effective way to reduce congestion than raising gasoline taxes or subsidizing transit fares, as it encourages people to exploit all possible alternatives to using congested roads, including rescheduling trips to drive at off-peak periods or driving on less congested, minor routes into town. But again, there are some subtle points to bear in mind. The demand for peak-period driving is not greatly sensitive to price; most people will still continue to drive at peak period even if they have to pay. Moreover, even if congestion pricing were implemented, it might not be very comprehensive; for example, it might be restricted to a limited number of highways and be applied to

Table 1. Summary of the Economic Effects of Taxes

	Policy				
	Gasoline tax	Transit fare	Congestion tax	Income tax or Sales tax	Property tax
Benefits	Reduces pollution; Modest effect on congestion	Reduces excessive fare subsidy	Reduces congestion		Reduces real estate subsidy
Costs	Higher driving costs	Higher transit costs; More pollution and congestion	Higher driving costs	Reduces employment	Reduces employment and investment
Revenue potential	Limited	Limited	Limited	Large potential	Large potential
Net economic benefit or cost*	Modest net benefits to modest net costs	Net costs, but probably smaller than income/sales taxes	Modest net benefits	Significant economic costs	Modest net benefits to modest net costs

* Excludes the cost of the money transfer from the private sector to the government.

only one lane on a highway rather than all lanes. Limited forms of congestion pricing are obviously less effective for tackling congestion in the Washington, DC, region; congestion on unpriced roads could worsen because people choose to drive on them rather than on priced (but less congested) roads.

Sales and Income Taxes

New transportation projects could be paid for by regional sales taxes, or by an increase in local income taxes. A proposal to allow jurisdictions in Northern Virginia to have a referendum on a 1% increase in the sales tax with half the revenues earmarked for transportation narrowly failed to pass the state’s general assembly in 2001. The main economic effect of increased income and sales taxes is to reduce employment, which can lead to significant economic costs.

Property Taxes

Property taxes provide another source of general revenues for local governments. The effect of the tax system on the real-estate sector is a complicated matter, but we can draw out two important opposing factors. On the one hand, local property taxes may be viewed as a tax on real estate (although firms and households may be compensated in part by better local services). On the other, the owner-occupied housing component of the real-estate sector is heavily subsidized through various tax provisions, including the income tax deduction for mortgage interest. Overall, there is probably a modest net subsidy for real estate, implying an excessive amount of spending on real estate relative to other goods. Raising property taxes can improve economic efficiency by counteracting this subsidy; however, by raising costs to businesses, it may adversely affect investment and employment.

Conclusion

Table 1 summarizes the economic effects of the various taxes. The revenue potential of the three transportation taxes (gasoline taxes, transit fares, and congestion taxes) is limited. For example, to increase transportation spending by 20% would require an increase in regional gasoline taxes of around 40 cents, or an increase in transit fares from approximately 50% of operating costs to well over 100% of operating costs. Neither of these tax increases would be politically viable. Taken individually, transportation taxes could only be part of a package of measures to raise a substantial amount of extra funding. However, because the general taxes (property, income, and sales) have a much broader base, only small changes in the rates of these taxes would be required to generate significant revenues.

An economic case can be made for relying on congestion taxes, gasoline taxes, and possibly property taxes to raise additional revenues. All three produce a direct benefit by reducing congestion, pollution, or a subsidy from the tax system. However, support for using congestion and gasoline taxes needs to be qualified for several reasons. Demand for both peak-period driving and gasoline is not greatly price sensitive, which limits the congestion and pollution benefits per dollar of revenue raised from these policies. Because they raise transportation costs, these policies can have adverse effects on employment and this narrows the difference between their costs and those of direct taxes on labor earnings or sales taxes. And some of the costs of pollution are already reflected in the price of gasoline through taxes.

Ian W.H. Parry is a fellow in RFF’s Energy and Natural Resources Division.