JOHN SEMMENS

Although the assumption has been made that intercity highways would provide the natural testing ground for increased private participation in the provision of road services, such an assumption may be unwarranted. It is true that intercity highways more easily fit the mold of a traditional toll road. However, there is no compelling necessity to adhere to this mold. The urban environment, in contrast, offers some significant attractions as a testing ground for privatization innovations. The need for innovative solutions is much more apparent in the urban setting. Urban traffic congestion and the higher cost of constructing new capacity point to a more urgent need for cost-effective solutions. The urban setting also presents more diversity of options for examining privatized alternatives. The possibilities for comparison and competition among possible approaches are much broader in an urban environment. For example, the potential problem of abuse of private monopoly power is less pronounced in an urban setting.

Where there are no means of transportation, the decision to build a road is a relatively simple one to make. Under such circumstances even the public sector can scarcely go wrong in plowing ahead with a decision to build. The margin for error that can be tolerated is large. The inherent and notorious inefficiency of government in providing goods and services may easily go unnoticed. The completion of almost any facility is bound to produce greater returns than costs.

Where there are many means of transportation, the decision on whether to build or not build a facility is more complex. In such circumstances there are many opportunities for the public sector to go wrong regardless of whether the decision is to build or not build a facility. The potential margin for error is small. The endeavor is no longer merely to make travel between two points feasible. The pay-off in nature. The goal is to examine the thought processes that could guide experimentation with privatization in order to consider whether the best candidates for initial test cases might be urban rather than rural roads.

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resources for maximum return on investment is not a task well suited to the public sector. Government lacks both the knowledge and the incentive necessary to achieve optimal efficiency in the production of goods and services. In contrast, in the private sector, the presence or absence of profit provides both the knowledge and the incentive to efficiently produce goods and services to meet consumer needs.

The key source of private-sector knowledge about the efficiency of a firm’s production of goods and services is the income statement. The information from this statement tells whether the firm’s efforts are generating profits or losses. Profits indicate that the undertaking can be sustained. Large profits indicate the possibility for expansion. Losses suggest that some changes may be in order: either improve efficiency or go out of business. This useful knowledge is not commonly available for the public sector’s highway activities. Financial statements for highway agencies are typically confined to mere cash flow data. For this reason, the budget is usually in balance. The revenues received are spent. Allowances for depreciation of long-lived highway assets are not made. Consequently, real losses that can threaten the solvency and sustainability of the highway system can be concealed in the reported data.

The lack of a profit-and-loss statement for public highways creates the need to improvise. To project a picture of the profitability (or lack thereof) of the U.S. highway system, a pseudo-income statement can be estimated. In constructing this estimate it has been assumed that user taxes represent sales revenues. Nonuser revenues have been excluded because these represent subsidies rather than “earnings.”

As can be seen from Table 1, the trend is not favorable. Losses are the likely future outcome of present trends and practices. Depreciation of Interstate facilities is increasing. As more of these highways reach the end of their design lives, major rehabilitation expenses loom. In addition, overhead costs have been outpacing construction activity. In the early 1960s the ratio of overhead to construction outlays was about 7 percent. By the early 1970s this ratio was around 12 percent. More recently this ratio has risen to 17 percent.

The purpose of presenting these figures is not to alarm but, rather, to illustrate. User taxes are not really customer sales receipts. Responsibility divided among federal, state, and local governments contributes to rising administrative costs. The public monopoly status of the road system short-circuits the transmission of valuable information that could come from a more competitive market environment. Under current conditions, the public sector has limited knowledge with which to make decisions affecting the efficiency of production and operation of the highway system.

Perhaps even more important than the knowledge problem is the question of incentives. Private-sector firms that do not make profits face extinction. The absence of this threat as a realistic possibility for public-sector highway agencies impedes the incentive to pursue efficiency. It is not so much that departments of transportation are totally oblivious to efficiency concerns. It is just that conflicting goals and objectives are often thrust on the highway agency. Advocates of various social goals think little or nothing of demanding that a public highway agency provide service that is not economically justified. The real financial losses generated by such service reduce the agency’s ability to fund more urgent needs.

A prime example of how the public sector is maneuvered into bearing the burden of unprofitable service is the case of the underpricing of heavy truck traffic. The Federal Highway Administration estimates that user taxes on the heaviest trucks cover only about 70 percent of the cost incurred in providing facilities to serve these vehicles. The political influence of the trucking industry is sufficient to secure below-cost pricing from the public highway agency. In a private-sector market context, this type of outcome cannot be sustained. Competition and the threat of bankruptcy from unprofitable and uneconomic operations prevent persistent inefficiencies like those found in the public sector.

Although awareness of the public sector’s problems in the areas of knowledge and incentive has encouraged many to suggest more private-sector involvement in the provision of highways, the form that this involvement should take is subject to much debate. Some proponents of private-sector involvement urge public-private partnerships for roadway development. “Partnerships” may make for good publicity, but the scope for improvement over current methods of doing things is severely limited. Under most partnership proposals, roads remain much as they are. The only difference is that some private-sector money is made available to aid in construction. If significant inroads into the inefficiencies of public-sector highway management are to be made, more substantial steps toward privatization need to be taken. Actual road segments will have to be transferred to private ownership. Only when the potential for profit or loss becomes a reality will the necessary knowledge and incentives for efficiency be in full force.

### WHY URBAN ROADS?

It has often been assumed that the best place to start testing the concept of roadway privatization is in the intercity setting. Existing toll roads serve as the models for this assumption. The attractions of such an approach are apparent. Successful intercity toll roads are known to be feasible. Tolls are perceived as the logical means by which privately owned roads would col-

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**TABLE 1 LONG-TERM INCOME STATEMENT FOR THE U.S. ROAD SYSTEM BASED ON HISTORICAL COSTS**

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User taxes</td>
<td>15.3</td>
<td>22.5</td>
<td>41.4</td>
</tr>
<tr>
<td>Investment income</td>
<td>0.6</td>
<td>2.1</td>
<td>3.9</td>
</tr>
<tr>
<td>Total</td>
<td>15.9</td>
<td>24.6</td>
<td>45.3</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance</td>
<td>4.8</td>
<td>10.9</td>
<td>21.8</td>
</tr>
<tr>
<td>Administration</td>
<td>1.2</td>
<td>3.0</td>
<td>7.8</td>
</tr>
<tr>
<td>Law enforcement</td>
<td>1.2</td>
<td>3.8</td>
<td>10.0</td>
</tr>
<tr>
<td>Depreciation</td>
<td>6.1</td>
<td>10.6</td>
<td>21.1</td>
</tr>
<tr>
<td>Interest</td>
<td>0.7</td>
<td>1.5</td>
<td>2.1</td>
</tr>
<tr>
<td>Total</td>
<td>14.0</td>
<td>29.8</td>
<td>62.8</td>
</tr>
<tr>
<td>Net</td>
<td>1.9</td>
<td>(5.2)</td>
<td>(17.5)</td>
</tr>
</tbody>
</table>

lect revenues. Under currently used technology, tolls are perceived as inconvenient, if not infeasible, as a means of collecting revenues on most urban roads. The necessity of stopping or at least slowing the vehicle to pay the toll would hamper the flow of traffic. In urban areas, where traffic volumes strain existing capacity, hampering traffic flow lowers the efficiency of the facility. In rural intercity settings, more manageable traffic volumes diminish the impact of slowing or stopping vehicles to collect tolls. Thus the rural route is perceived as most appropriate for privatization.

Given the premise that the traditional toll collection method is the only feasible means of obtaining revenue, the conclusion that rural routes provide the best prospects for privatization is eminently logical. Fortunately, there are other prospective means of obtaining revenue. In addition, there are reasons beyond the revenue collection issue for favoring the selection of urban road segments for privatization.

A prime consideration in the decision to experiment with privatization is whether institutional barriers might impede the effort. Intercity rural routes present more potential institutional barriers than many intracity routes might pose. The most lucrative potential intercity routes are likely to be state system roads that have been built, in part, with federal aid. Current federal law prohibits the institution of tolls on roads built with federal aid unless that aid is paid back to the federal government. This is not to say that federal law cannot be repealed. Suggestions to this effect have been repeatedly made. However, it does make it clear that a state cannot unilaterally effect a conversion to a toll road without substantial cost.

In addition to this specific federal barrier to the implementation of toll roads, there is the more general proposition that it is harder to bring about a change in direction of a large entity. Changing direction in a state would be easier than changing direction in the whole nation. Likewise, getting a whole state to revise its policy toward privatization is apt to be more difficult than convincing a local government to try a new idea. The numbers alone help illustrate this point. To change the nation, one-out-of-one government must be persuaded. To change a state, one-out-of-fifty governments must be persuaded. To change a local government, only one-out-of-eighty-thousand must be persuaded. In addition, roads owned by local governments are less likely to have been built with federal aid—thus the issue of paying back funds for converting to a toll facility is avoided.

The volume of traffic likely to use a road is another factor that affects whether rural or urban roads should be considered as candidates for privatization. In Arizona, for example, many rural intercity road segments have quite light traffic. Some of these roads probably never should have been built and would not have been if economic feasibility had been the deciding criterion. Other roads may have been economically justified at one time but have diminished in importance with the decline of travel in the region. Roads like these are more suited as candidates for abandonment. Privatization may be resisted by those who are aware that private firms sustaining losses on such roads are wont to abandon them. Worse, the all too predictable failure of such privatized routes could be cited as “proof” that privatization itself is a failure.

In contrast, higher traffic volume on urban streets presents many more viable options for privatization. The prospect of earning adequate revenues from continued operation of the facility helps subdue the fear of abandonment and loss of service. This should make the privatization experiment politically more palatable. There will also be more possible candidate facilities for privatization. People appear to tolerate the existence of public-sector monopoly of the “only” route between Points A and B, but similar tolerance of a private-sector monopoly is not as likely. The existence of multiple options for privatizing one or more parallel urban routes that serve as competing means of getting from Point A to Point B can help avoid this perceived problem.

A side benefit from privatizing more heavily traveled urban routes is that the government agency divesting the facility may realize a substantial sum of money from the capitalized present value of future earnings on the route. Rural routes with poor traffic cannot be expected to generate much in the way of earnings. Consequently, their selling price to a private firm will be low—probably lower than the cost to construct the facility. Conversely, the selling price of heavily traveled urban segments is apt to be quite high—possibly more than the cost of construction. For example, the urban segment of US-60 that becomes Grand Avenue and Van Buren Street in Phoenix generates more than $200,000 per mile per year in highway user taxes. Over a 20-year period, the present value of such a route will be considerably more than a rural segment if the same US-60 that produces only about $20,000 per mile per year in highway user taxes. The funds flowing to a city from the sale of busy urban streets could be used for meeting other community expenses.

Revenues collected directly from road users are only part of the potential earning power of roadways. Several other possibilities suggest themselves. All of these possibilities have much greater potential impact in an urban than in a rural setting. A most obvious possibility is the prospect for advertising revenue. Advertisements along the side of the road are seen by more people on heavily traveled urban streets than on more lightly trafficked rural roads. Renting space to advertisers is likely to bring larger sums on urban routes. A second source of earning power would be the value of the air space over the roadway. In rural areas, this value is apt to be nil. In crowded urban environments, where real estate is expensive, the right to build over the roadway right-of-way could be worth some money. A third source of earning power could come from access charges on businesses located along the roadway. Convenient access could enhance the commercial success of businesses abutting a roadway. Payments for enhanced convenience could provide another important source of revenue to the roadway owner.

In any case, whatever the sources of additional earning power might be, it is clear that urban segments are likely to prove more lucrative than rural segments. This extra earning power raises the value of the urban route. More private firms would be likely to bid to acquire urban route segments. More bidders will increase the selling prices of the divested roadways. Because this could enable the selling government either to use this money to reduce other taxes or to augment other services, additional political support could be generated.

Even if the financial benefits from the sale of heavily traveled urban roads were not of concern, privatization of city streets might be considered first because of the greater need for...
solutions to urban travel problems. It is in the urban regions that traffic is daily brought to a standstill in the ironically named “rush hour.” In most large cities there is little rushing going on during these periods. Highways are clogged beyond their capacity to serve traffic. If necessity is the mother of invention, there should be more potential for invention in the urban transportation situation.

It almost goes without saying that the reputations of the public and private sectors in the realm of invention and innovation are vastly different. Governments at all levels are charged with representing the popular will. The public sector is moved to action by consensus or majority rule. Invention, by its very nature, challenges popular wisdom. Invention poses new and untried ways of doing things. Obviously, invention and consensus are largely incompatible.

Fortunately, the private sector is not as tightly constrained as the public sector when it comes to implementing new ideas. Whereas a democratic political structure requires majority approval in order to act legitimately, a capitalistic economic structure requires only that a sufficient amount of resources be obtained to support new ventures. This “sufficient amount” is obtained much more readily, for many more new ideas, than is majority support through political processes. Inspired eccentricities can succeed in private-sector capitalism. Their fate in political democracy is less sanguine.

Privatizing urban roadways will bring together the powerful forces of great need and economic capitalism. Unchained by political restraints, private-sector roadway operators may engage in a wide variety of experimentation. The feast-and-famine of swings from excess to inadequate capacity on urban roads during off-peak and peak periods is a problem in need of solutions. Merely building more capacity—the only politically safe option in the public sector—is expensive. Finding ways to adjust demand to spread it more evenly over existing capacity is less expensive but politically volatile. Private-sector firms will have more latitude in addressing this problem.

Private firms have already experienced some successes in smoothing out peaks and valleys in demand. Other industries with heavy fixed and light variable costs have used differential pricing to rechannel a portion of demand to off-peak periods. Movie theaters feature midweek and twilight-hour special reduced prices to fill otherwise wasted or underused capacity. Electric utilities and telephone companies offer time-of-day rate schedules to entice consumers to shift some of their demand to off-peak hours. And, in the transportation field, airlines offer a plethora of travel plans designed to lure price conscious fliers into what would otherwise be empty seats.

The urgency of traffic congestion problems in urban settings provides a much more potent force for solutions that are possible with privatization than does the overcapacity situation of most rural roadways. Experiments with signalization, speed controls, one-way streets, and access restriction are all more apt to be tried under privatized roadway ownership. With the cost of new urban roadway capacity so high that construction is often infeasible, better use of existing capacity is crucial to the fiscal well-being of our cities.

A final rationale for preferring urban to rural roads as the best candidates for privatization is that the urban environment provides the better market model. The private sector is at its best when there is competition among various providers and would-be providers of some service. This competition pushes providers to improve their market offerings by either lowering the price or upgrading the quality, or both. The urban environment is more apt to exhibit the features of a competitive marketplace. Intercity rural routes are prone to exhibit the features of monopoly.

In the city there are numerous ways of getting from here to there. Many of these ways are comparable in terms of convenience and ease of access. The opportunity for road users to select alternate routes helps reduce the potential for monopoly abuse on the part of road owners. In a competitive market a consumer’s selection of service from one firm reduces the revenues of other firms. This acts as an incentive for the unselected firms to better their market offerings. Under a monopoly situation, where there is no opportunity to choose, the incentive to better market offerings is greatly reduced. For example, given contemporary monopoly-type conditions under public ownership of roads, highway agencies often have somewhat ambivalent attitudes toward the inconveniences and delays posed by construction activities on existing roads. Personal pride may work to encourage expeditious completion of projects; however, there is little financial incentive to speed up the work. Occasionally there is even an “off-the-record” opinion that construction delays can be beneficial to highway agencies: poor fuel efficiency in traffic jams or over rough roads under construction may increase gasoline consumption and the tax revenues from the per gallon levy, and the frustrations experienced in traffic tie-ups may make citizens desperate enough to favor tax hikes for the purpose of building more roads.

The ills of monopoly and the inferior service and efficiency that epitomize monopoly are well documented in the economic literature. There will not be as good a test of the potential advantages of privatization if an approach that is severely limited in terms of competitive possibilities is pursued. Use of rural intercity routes as the testing ground for privatization is an approach with limited competitive possibilities. The absence of close substitutes for the privatized intercity route will probably inspire the imposition of regulations and controls aimed at reining-in prospective monopoly abuse by the private owners of roadways. These regulations will tend to stifle the experimentation and innovation that promise to result in some of the major advantages of private versus public ownership of highways.

In contrast, the urban setting presents the opportunity to test relatively unregulated competition. The larger number of potential road segments that could be sold should invite more bidders. It will not be necessary to own the whole road in order to have a viable economic unit of an urban street. Many smaller firms could own a few miles of a route and still have a chance to profit. Achieving varied and dispersed ownership is an important objective in privatization. Different owners may choose different methods of operating roads. More of a variety of options can be tested. The successful techniques can be copied and modified by competitors. This will speed up the pace of evolution of the road operation industry from the glacial deliberateness it now evinces under public ownership.

The few traffic management innovations that have been developed in recent years have come in urban areas. Singapore was the site for testing whether access to congested areas could
be controlled via a visual identification system and differential pricing. Hong Kong is the site of an ongoing experiment with automatic vehicle identification technology. In this experiment differential pricing and automated billing techniques are being used as a means of managing urban traffic's use of limited capacity.

The faster pace of city life also argues for selecting urban over rural routes for the first steps toward privatization. City dwellers are more attuned to rapid change. New ideas and new products are more frequently introduced and tested in urban markets. Economies of scale—the ability to get a quick reaction from a large and diverse group of people—are one of the attractions of the urban environment. City people are also less insular than their bucolic counterparts in the countryside. Consequently, city people are apt to be more willing to try new ways of doing things. In contrast, one of the main attractions of a rural life is the slower pace of change. This leads to a natural conservatism that may prove a less fertile ground for experimentation with privatized roads.

HOW TO PRIVATIZE?

If it is concluded that privatization is desirable, there still remains the question of how to accomplish such a feat. The red tape facing those who would like to privatize the highways is formidable. Governments at the federal, state, and local levels have pretty thoroughly entangled themselves in many aspects of each other's business. As was mentioned earlier, this entanglement in itself argues for looking at locally owned roads as the easiest to untangle in order to privatize.

Specific authority to privatize may or may not exist for any given community. However, such authority may not even be needed. Municipal charters routinely grant powers to acquire and dispose of properties for public purposes. It should not be assumed that the absence of a detailed authority to privatize prohibits privatization. Privatization is an appropriate environment for "loose constructionists." That is, any power not expressly forbidden is granted. The public sector's responsibility in any of its tasks is to see that the job gets done. It is not an ineluctable necessity that the public sector do the job itself. The growth of contracting-out of assorted community services like trash pickup and street sweeping is evidence of the feasibility of non-public-sector provision of service.

In some cases specific authority for disposing of erstwhile public roads is granted by statute. The Arizona Revised Statutes, for example, allow the State Transportation Board to dispose of unneeded state highways. These same statutes also permit local governments to dispose of public roadways. The Statute (ARS 28-1902) does take pains to protect the access rights of property owners whose land abuts the roadway to be disposed of. The concern is that a landowner not be cut off from access to his property by abandonment of the only roadway providing such access. Because the objective of privatization is not to close roadways but to employ the substantial regenerative powers of the marketplace to improve service, it is not clear that these restrictions of the statute would even be relevant.

However the actual transfer of ownership may be governed, the issue of how the new private owners are to reap revenues is a major concern. As things now stand, government collects significant user taxes from those who drive on the roads. These taxes are earned as the vehicles and drivers paying them travel the roadways. The more miles one drives, the more gasoline taxes one pays. The question is what will become of the user taxes earned on roads that have been sold to the private sector? If none of these user taxes attach to the roadway it will be difficult, if not impossible, to sell many roadways. If the user taxes do attach to the roadway, some means of measuring or estimating the magnitude of earnings will need to be established in order to properly transfer these monies to the road owners.

It will be important to tie revenues received from user taxes to actual traffic on a given roadway. If revenues are not tied to traffic, as they frequently are not in public-sector distributions of user taxes to state and local governments, the road owner has an incentive to discourage traffic. Traffic always represents an expense in terms of wear-and-tear on the roadway. If revenues that can be earned rise with traffic, road owners will compete to attract traffic. Owners who find efficient ways to move more vehicles will increase profits.

The ways cities or states measure traffic may well differ. Most highway agencies now perform some form of traffic measurement. Even the crude tube count method would provide some reliable data with which to set compensation from shares of user taxes. Because this crude method cannot be comprehensive and continuous, it would be best that it be conducted in a spontaneous and random fashion to better assure the integrity of the statistical information gathered. It will not do to allow advanced warning because this may contribute to rigged data and false extrapolations that result in a projected sum of the parts that is greater than the whole.

Other than determining the appropriate share of highway user taxes due a private-sector road owner, government should not seek to control pricing policies. Road owners should be permitted to pursue varying marketing strategies. Some will opt for low price to generate high volume. This might entail granting partial rebates of user taxes paid to the road-owning firm and pass-through to consumers. Some may opt for improved quality at a higher price. This could attract time-sensitive travelers who would rather pay more to save a few minutes per trip. Other more complicated strategies may be employed as well. In any case, it is not the role of the public sector to review and approve prospective marketing strategies. Attempts to do so will have negative effects. Competition will be reduced. Second, the selling price the public sector can realize by divesting various roads will be higher with fewer constraints on how the sold facility is to be operated.

Perhaps the private-sector owners of roads will develop technological innovations that will aid in marketing their product and collecting revenue. Existing transponder devices represent a possible avenue of exploration. Whatever the possibilities, it is not for those in the public sector to predict or prescribe what should be done. The aim is to unleash the private sector so that it may use its abundant creative
capabilities for the provision of highway transportation facilities.

The great success of the public sector in America has been in the creation of a framework of law within which individuals and businesses can pursue their own ideas of what constitutes happiness. Free men and women are the source of material prosperity. Those in the public sector must be satisfied with cultivating the conditions that are conducive to private solutions to human needs. The same market forces that succeed in turning raw land and seed into our noontime repast are eminently qualified to transform our highways into more efficient mechanisms for benefiting the general welfare.

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