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POLICY

BRIEFING

NUMBER 17

NOVEMBER 25, 2008

PRIVATE PROVISION OF HIGHWAYS: ECONOMIC ISSUES

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Privately owned or operated roads, common in the turnpike era but mostly gone by 1930, have made a startling comeback. Several European nations, including Spain, Portugal, Italy, and France, have long used toll roads as the predominant form of high-speed intercity expressways, and have recently converted most of them to private systems. Other countries, including the UK, Australia, Canada, and Finland, have taken steps in that direction.

The United States has moved more slowly. Nevertheless, private toll roads are gathering momentum here as well. Launched by 1990 California legislation promoting private infrastructure, new roads have now been privately financed in California, Virginia, and Texas, while existing public toll roads have been privatized in Illinois and Indiana. Other states are sharply debating whether to follow suit. Much of this activity proceeds opportunistically, as illustrated by the ability of Chicago to raise \$1.8 billion, and Indiana to raise \$3.8 billion, in up-front payments for long-term leases of existing toll roads. By contrast, Texas has adopted an ambitious long-term plan to integrate

private highway builders and operators into future highway expansion, although implementation has been slowed by political controversy.

What accounts for this revival? The most potent factor is probably financial difficulties in the public sector that inhibit the maintenance and expansion of infrastructure. In the United States, these difficulties largely stem from a traditional heavy reliance on fuel taxes to fund that infrastructure — a financial base that is being undermined by rising fuel efficiency, alternative fuels, and public reluctance to accept raises in tax rates that would be large enough to keep pace with inflation. A second factor is experimentation in the private provision or partial deregulation of other public services, such as electricity, water, and mass transit. A third factor is the desire to lower the cost of providing infrastructure. A final and important factor is urban congestion, the intractability of which leads policymakers to seek alternatives to a “business as usual” approach to highway provision. These alternatives include pricing, which in turn makes private provision more natural.

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An important potential advantage of providing roads privately is greater control over risk factors in construction and maintenance, using financial incentives to encourage the most efficient tradeoffs.

Each step toward greater private involvement raises public concern about such issues as toll rates, market power, double payment by users, risk bearing, cost overruns, bankruptcies, traffic diversion, constraints on future public works, government use of up-front payments, and uneven application of tax provisions regarding bond finance and asset depreciation. Most of these are economic issues, amenable to objective analysis, but they are complex, and in many cases answers are not definitive.

CAPITAL, FINANCING, AND INCENTIVES

One could argue that if road investments are deemed important, citizens would be equally willing either to tax themselves to accommodate public-sector spending, or to encourage private investment funds to flow from other sectors of the economy into roads. Thus, relying on the private sector does not increase the inherent ability of the economy to support road investment.

However, there are practical constraints on both the public and private sectors that can reduce their ability to accommodate citizens' investment priorities. On the private side, significant tax considerations — especially taxes on capital — drive a wedge between the social returns from investment and the returns realized by owners of firms. On the public side, restrictions on debt financing by state and local governments sometimes make it difficult for them to raise investment funds even if they could pay off the debt with toll proceeds. They may instead have to rely on current tax proceeds — and, therefore, on unpopular tax increases in the short term — for investment projects.

An oft-cited drawback of private financing is that the private sector must earn a higher rate of return on capital than does the public sector, because of taxes on capital and the government's use of tax-free bonds. To assess this argument, one must take into account all the social costs involved, not just the financial cash flows. By the same token, for public policy purposes, a true comparison of costs of any kind must subtract from the private costs any taxes included, because the latter are transfers from one entity to another rather than a net cost to society. More precisely, a full comparison of net costs must subtract tax payments multiplied by a factor measuring the "deadweight loss" from collecting other taxes that would otherwise be required to produce the same revenue.

An important potential advantage of providing roads privately is greater control over risk factors in construction and maintenance, using financial incentives to encourage the most efficient tradeoffs between risk and other factors. When the outcome of a risk can be influenced by one of the parties involved with an infrastructure project, it is desirable for that party to bear the risk. For example, if a private firm bears the risk of cost overruns, it will work to account for the effects of unexpected events on costs.

PRICING

One of the most widely held views of professional economists about transportation is that the way users currently pay for public roads serves the public interest very poorly. Most critical is that prices are much too low for highly congested roads and do not vary in a helpful manner with time of day. One of the innovations accompanying the private



provision of roads has been a move toward pricing that takes congestion into account.

One way in which the private sector may introduce pricing innovations is by building and operating special express lanes that parallel a congested road and operate at higher speeds, available for a price that varies by time of day. In most cases, these express lanes are “High Occupancy Toll” (HOT) lanes, in which carpools drive for free (or at a reduced price) and other vehicles pay the toll. A primary example is the “91 Express Lanes” in Orange County, Calif., part of State Route 91. These express lanes were proposed, built, and initially operated by a private consortium. Other examples can be found in Colorado, Minnesota, Washington, and Virginia; there are also several projects in the Trans-Texas Toll Corridor for which proposals were solicited beginning in 2004.

Private roads with little direct competition are a different case, because they confer a degree of market power on the franchisee. One example is California State Route 125, serving far eastern suburbs of San Diego and opening in phases beginning in 2008. Market power in private toll roads raises the same public policy issues as market power in any other industry, where such power is generally either prohibited by anti-trust laws or carefully regulated as in the case of electric utilities. Regulating a toll road is less complicated than regulating an electric utility, but it still raises the question of whether regulation should specify prices, rates of return, performance standards, and/or required investments.

FRANCHISING ARRANGEMENTS

The franchising process makes certain planning assumptions explicit, although

the agreements themselves may be highly technical and their provisions difficult to explain to the public. The franchise agreement is a natural place to stipulate any public objectives that might differ from private ones. Examples include environmental practices, links to the larger road network, price stability, and worker protection. Other examples, such as safety measures and scenic values, would in principle be considered by the private operator in any event (assuming the agreement allows it to keep at least some of the revenue from marginal traffic generated) — but perhaps only partially, because there may be public values not reflected in users’ willingness to pay.

Requiring the franchisee to meet objectives other than those that increase profits will naturally tend to reduce the value of the franchise to the private operator and hence the amounts of private bids for that franchise. This tradeoff is vividly illustrated by the franchise terms for five recent road privatizations: two in the U.S. (Chicago Skyway and Indiana Toll Road) and three in France (three parts of its motorway network). The two U.S. franchises were won with bids of 60 and 63 times current earnings, whereas the three French cases had multiples between 12 and 13. Several factors accounted for this striking difference in contract value. Three of the most important were concession length, maximum rate of toll increases, and maximum leverage ratio.

The U.S. auctions, which specified very long franchise durations, also exhibited a much larger spread between the first-highest and second-highest bids. This variation may be explained by the probability that different bidders assumed different growth rates for operating expenses and traffic.

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Theoretical studies and simulations have found that the public benefits from toll roads are quite sensitive to the toll rate. This is especially true when unpriced substitutes are available nearby, which is common and often specified as a prerequisite for allowing toll roads. In this case, setting the toll too low will encourage too much overall corridor traffic, while setting it too high will encourage too much of that traffic to remain on the already congested free road.

Perhaps the most important lesson of this discussion is that when a toll road is set up to compete with free roads for traffic, it is desirable to set toll rates at something less than those that maximize private profits or payments to the public authority, and probably less than those that will cover the cost of construction. Thus, subsidies are likely to be desirable, especially for the lower-volume, less financially attractive roads that many regions want in order to encourage regional integration and economic development.

For the privatization process to proceed smoothly throughout the life of a franchise, it is important to include as many factors as possible as contingencies in the agreement, and/or to set out a framework for renegotiations that leaves neither party at the mercy of the other.

CONCLUSION

The public sector's use of private firms to provide highway infrastructure can expand the range of funding sources available for timely investments, because of the fiscal and political constraints on governments and the desire to avoid economic distortions resulting from high tax rates. There are sources of private funds whose desire for long-term stability

and ability to diversify over project-specific risks make road investments a good idea for them as well. Furthermore, private firms can usually react more quickly to opportunities than can the public sector, and thus can expedite the process of coping with a backlog of needed infrastructure improvements.

The use of private firms can produce substantial benefits with respect to risk-bearing. However, their use should not be viewed simply as a way for the public sector to shed risk. Rather, through the franchising process it is possible to specify flexible forms of risk-sharing that allow each entity to bear the risk for which it is most suited. The public interest is enhanced when a franchise agreement provides incentives for each party to minimize the consequences of unexpected detrimental events by taking measures to reduce either the likelihood of such events or the financial consequences to which such events expose them. As for bearing the remaining irreducible uncertainty, there is no strong reason to believe that either the private or the public sector has much advantage; rather, the balance depends on specific situations.

The private provision of highway services offers benefits in many situations. It deserves a prominent place in highway policy, especially given its potential to provide new capacity in a fiscally constrained and congestion-challenged environment. In order to realize these benefits and to prevent undesirable outcomes, however, the public sector must be sophisticated in setting the terms under which private firms operate.

For more details, please see Show-Me Policy Study no. 17, which is available at www.showmeinstitute.org.



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